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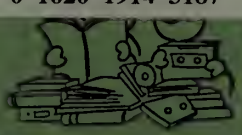

Alberta Authorized Resource List and Annotated Bibliography

Science 14-24

October 2003

Alberta
LEARNING
Learning and Teaching Resources Branch

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Science 14-2
and annotated bibliography.

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ISBN 0-7785-2610-0

1. Science - Study and teaching (Secondary) - Alberta. I. Title.

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The primary intended audience for this document is:

Administrators	
Counsellors	
General Audience	
Parent School Councils	
Parents	
Students	
Teachers	✓

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OVERVIEW

Alberta Learning Authorized Resource Categories

This list of Science 14–24 resources, contains resources that have been authorized for use in Alberta schools. Alberta Learning selects and authorizes the best possible instructional materials for the implementation of approved programs of study. The resource authorization categories are **student basic, student support** or **authorized teaching,** and the status is noted for each resource.

Student Basic learning resources are those student learning resources authorized by Alberta Learning as the most appropriate for addressing the majority of outcomes of the course(s) or substantial components of the course(s); or the most appropriate for meeting general outcomes across two or more grade levels.

Student Support learning resources are those student learning resources authorized by Alberta Learning to assist in addressing some of the outcomes of the course(s) or components of the course(s); or to assist in meeting the outcomes across two or more grade levels.

Authorized Teaching resources are those teaching resources identified as the best available resources to support the implementation of programs of study and courses; they may be teacher guides to accompany student resources or teacher professional resources. The authorized teaching guides are listed with the student resources.

The list of these resources is organized by grade and by unit (Unit A to Unit D) within each grade.

Note:

Alberta Learning strongly recommends that teachers read all selections in the student resources and all activities in the teacher guides prior to using them with students. Careful consideration should be given to the sensitivities of both the student audience and the community.

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Annotated Bibliography

Annotations for these new Science 14–24 resources are included in alphabetical order at the end of each grade. The annotations identify the grade(s) and unit(s) the resource is authorized for, a brief description of content, publisher, copyright date and purchasing information.

> **Note:**
>
> As additional new resources authorized for Science 14–24, their titles/grades and annotations will be included in the next edition of this document.

Availability

Most of the new Alberta resources are available for purchase from:

Learning Resources Centre
12360 – 142 Street, Edmonton, AB T5L 4X9
Telephone: 780–427–5775
Fax: 780–422–9750
Internet: <http://www.lrc.learning.gov.ab.ca>

LRC order numbers and prices (as of the printing of this booklet) are included for each resource.

Those resources which must be purchased directly from the vendor/distributor are so noted on the authorized list and on the annotation. A listing of vendors/distributors is provided at the end of this booklet.

Authorized Science Resources

> **Note:**
>
> For a **complete** list of Science 14–24 resources, consult the Learning Resources Centre *Buyers Guide*. Some of the older resources will be withdrawn from authorized status in the year(s) ahead.

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Alberta Authorized Resource List and Annotated Bibliography

Science 14

Alberta
LEARNING
Learning and Teaching Resources Branch

SCIENCE 14
Units A, B, C, D

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Basic Learning Resources				

This custom-developed student text, with integrated multimedia CD–ROM, provides direct support for the Science 14 program. The CD–ROM consists of ten interactive learning modules that complement topics addressed in the textbook.

The Teacher's Resource CD-ROM is designed to assist teachers in implementing the Science 14 program. It aligns with the Science.Connect 1 basic resource produced by this publisher. Features include planning guides, assessment rubrics, answers to questions and blackline masters. All components can be edited to provide flexibility.

Science.Connect 1 (Student Text and CD-ROM)	2002	**Basic** 14A / 14B / 14C / 14D	470972	$60.05 LRC
Science.Connect 1: Teacher's Resource CD-ROM	2002	Authorized Teaching 14A / 14B / 14C / 14D		LRC
		Science.Connect 1: Teacher's Resource on CD-ROM (Site License)	470980	$490.00
		Science.Connect 1: Teacher's Resource (Print)	480848	$120.00

©Alberta Learning, Alberta, Canada

SCIENCE 14

Unit A – Investigating Properties of Matter

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Support Learning Resources				
Reactivity of Elements *Science Key Concepts: Chemistry Series*		Support 14A	513243	$34.95 LRC
Separating Mixtures: Size, Crystallization, Chromatography, Gravity, Sieving, etc.	1995	Support 14A	519770	$80.70 LRC
Authorized Teaching Resources				
NEW The Flow of Matter and Energy (Video and Teacher's Guide) *Biology: The Science of Life Series*	2000	Authorized Teaching 14A / 14C / 14D	BPN 20548-01	ACCESS–The Education Station

Unit B – Understanding Energy Transfer Technologies

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Support Learning Resources				
Biomass Energy	1981	Support 14B / 14D	521311	$58.40 LRC
Harness the Wind; The Solar House; Bate's Car: Sweet as a Nut; Bill Loosely's Heat Pump *A World of Energy 2 Series*	1987	Support 14B	485682	$58.40 LRC
Authorized Teaching Resources				
Lever; Wheel and Axle, Pulley (Revised) (with Instructor's Guide and Pre-Test) *Work, Energy, and the Simple Machine Series*	2001	Authorized Teaching 14B	513300	$34.95 LRC

SCIENCE 14

Unit C – Investigating Matter and Energy in Living Systems

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Support Learning Resources				
NEW Cells and Tissues *Science Key Concepts: Biology Series*		Support 14C	478273	$34.95 LRC
Authorized Teaching Resources				
NEW The Flow of Matter and Energy (Video and Teacher's Guide) *Biology: The Science of Life Series*	2000	Authorized Teaching 14A / 14C / 14D	BPN 20548-01	ACCESS–The Education Station
The Living Cell *Biology: The Science of Life Series*	2000	Authorized Teaching 14C	BPN 20548-02	ACCESS–The Education Station /
Photosynthesis: Light into Life (Videocassette with Teacher's Guide)	1997	Authorized Teaching 14C	485509	$232.65 LRC
Photosynthesis (with Teacher's Guide) *The World of Plants Series*		Authorized Teaching 14C	513251	$34.95 LRC

SCIENCE 14

Unit D – Investigating Matter and Energy in the Environment

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Support Learning Resources				
Biomass Energy	1981	Support 14B / 14D	521311	$58.40 LRC
Burns Bog: A Road Runs Through It	1999	Support 14D	468018	$46.70 LRC
Managing Our Resources *Forests of the World Series*	1993	Support 14D	513235	$34.95 LRC
NEW Wild Goose Chase		Support 14D	521402	$58.40 LRC
Authorized Teaching Resources				
Ecosystems: Organisms and their Environment (with Teacher's Guide) *Elements of Biology Series*	2002	Authorized Teaching 14D	513227	$34.95 LRC
NEW The Flow of Matter and Energy (Video and Teacher's Guide) *Biology: The Science of Life Series*	2000	Authorized Teaching 14A / 14C / 14D	BPN 20548-01	ACCESS–The Education Station

Science 14: Annotated Bibliography (alphabetical listing)

LRC Order No.: Est. Price:

Biomass Energy

521311 $58.40

Support Resource

© 1981

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
	✓		✓

Biomass energy, as a renewable alternative to oil and other non-renewable energy sources, has been under research and development for over 20 years. This video explains the potential of Canada's vast forests as a source of biomass energy, illustrating production and conversion techniques. A brief explanation of how urban wastes could be used for biomass energy production is also included. Produced in 1981, this video is narrated by science broadcaster Bob McDonald, who might be familiar to students from the media exposure he receives. The resource makes numerous predictions about the future potential for biomass energy production. More than 20 years later, are we there yet? This is a good question to discuss after showing this video to students.

Burns Bog: A Road Runs Through It

468018 $46.70

Support Resource

© 1999

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
			✓

Burns Bog, located on the southern fringes of Vancouver, is a rare ecosystem that is home to nearly 200 species of mammals and birds. Unfortunately, it is faced with imminent destruction as the area's growing human population encroaches on the bog's edges. This visually appealing 24-minute video provides an in-depth exploration of this diverse ecosystem and the dilemma of protecting this environment versus meeting the needs of a growing population.

LRC Order No.: 478273 Est. Price: $34.95

Cells and Tissues

Science Key Concepts: Biology Series

Support Resource

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
		✓	

This 15-minute video makes effective use of live photography, scanning electron microscope images, and computer graphics to describe the basic structures and functions of cells. Plant and animal cells are explained and compared; however, more images of plant cells are shown. The video includes onion skin photomicrographs, which would help students identify cell parts observed through the microscope in their school lab. Mitosis is explained, and meiosis is briefly covered. The concept that tissues consist of groups of similar cells functioning together is introduced. The brief teacher notes include links to Internet sites that provide additional information on cells and tissues; however, these sites have not been reviewed or authorized by Alberta Learning.

Ecosystems: Organisms and their Environment (with Teacher's Guide)

513227 $34.95

Elements of Biology Series

Authorized Teaching Resource

© 2002

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
			✓

This fast paced, visually appealing video covers a variety of concepts relating to ecosystems. The resource discusses how organisms live in communities of plants, animals and microorganisms that interact interdependently in their environment. Food webs and food pyramids are used to discuss the flow of energy. The water, carbon, and nitrogen cycles are introduced. The last segment of the video focuses on human impact on ecosystems and some of the serious environmental problems that face us today. A teacher's guide with a variety of activities as well as pre- and post-tests accompanies the video.

LRC Order No.: Est. Price:

The Flow of Matter and Energy (Video and Teacher's Guide)

Biology: The Science of Life Series

Authorized Teaching Resource

© 2000

ACCESS–The Education Station
BPN 20548-01

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
✓		✓	✓

This video examines how matter and energy flow through the "living world," connecting all living organisms. The video focuses on photosynthesis, cell respiration and food chains. The resource also provides a brief review of basic concepts related to matter, elements, atoms, molecules, chemical bonds and chemical compounds, tying previously learned material from Units A and C of Science 14 into Unit D: Investigating Matter and Energy in the Environment. A variety of clips of living organisms enhance the visual appeal of the video. The teacher's guide provides pre- and post-tests as well as follow-up activities.

Harness the Wind; The Solar House; Bate's Car: Sweet as a Nut; Bill Loosely's Heat Pump 485682 $58.40

A World of Energy 2 Series

Support Resource

© 1987

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
	✓		

During the first half of this 48-minute video, the alternate energy possibilities of wind energy extraction and solar home heating design are thoroughly explored through detailed animations. The third and fourth segments of the video examine the efforts of two inventors to develop and use biomass and solar heat pump technologies as small-scale alternatives to petroleum fuels for motor vehicles and home heating. Although the video was produced by the National Film Board of Canada in 1987, much of the material is still relevant within a science and technology emphasis. However, more recent information on alternative energy will need to be provided as a supplement.

LRC Order No.: 513300 Est. Price: $34.95

Lever; Wheel and Axle; Pulley (Revised) (with Instructor's Guide and Pre-Test)

Work, Energy, and the Simple Machine Series

Authorized Teaching Resource

© 2001

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
	✓		

This 16-minute video effectively describes and explains levers, the wheel and axle, and pulleys, and provides everyday examples of how these devices are applied. Each of these simple machines is discussed in detail with videos of real world examples and computerized graphical animations to support the presentation. A complete teacher support package with numerous blackline masters is included. Note that the video does not completely develop the relationship of force and distance to work; this aspect will need to be supplemented by the teacher.

The Living Cell

Biology: The Science of Life Series

Authorized Teaching Resource

ACCESS–The Education Station
BPN 20548-02

© 2000

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
		✓	

This 15-minute video is an excellent resource for providing basic information on cell structure and function. The video uses live-action video and computer animation to explain photosynthesis and cellular respiration, relating them to cell function and structure. It also introduces other functions of the cell, including repair and reproduction. There is an accompanying teacher's guide that contains the narrated script, pre- and post-tests and blackline masters. The vocabulary list and crossword activities are useful enrichment materials if time permits.

LRC Order No.: 513235 Est. Price: $34.95

Managing Our Resources

Forests of the World Series

Support Resource

© 1993

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
			✓

This 27-minute video covers a range of topics related to forestry, including tree farming and ecosystem management. It briefly explores the effects of logging on organism populations, and also touches on how vital chemical resources are extracted from certain trees for use in medicines. This resource takes a world-view of forests and could be used for a more in-depth study of forestry.

513251 $34.95

Photosynthesis (with Teacher's Guide)

The World of Plants Series

Authorized Teaching Resource

Author(s): Colgren, J; Fuqua, P. (Teacher's Guide)

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
		✓	

This 10-minute video examines the role of photosynthesis in providing food and oxygen to living systems. Magnified cross-sectional views of a leaf show the location and importance of stomata and chloroplasts in leaf tissues, while computer animated models illustrate the overall reaction of photosynthesis. The importance of photosynthesis to other organisms is emphasized throughout. Print materials accompanying the video include a pre-test, post-test, quiz, crossword and supplementary laboratory activities.

© Alberta Learning, Alberta, Canada

LRC Order No.: 485509 Est. Price: $232.65

Photosynthesis: Light into Life (Videocassette with Teacher's Guide)

Authorized Teaching Resource

© 1997

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
		✓	

Discover what makes photosynthesis the essential part of the cycle of life. Plants are natural solar collectors, converting solar energy into a usable form for themselves and all other forms of life. This video uses colour animation, live-action photography and diagrams to enhance visual learners' understanding of the vital energy-giving process of photosynthesis, as well as the energy releasing process of cellular respiration. Chemical equations for both processes are reviewed and the importance of glucose and oxygen are highlighted. The video examines leaf and chloroplast structure to show the role of chlorophyl and other pigments in trapping sunlight. Both light and dark reactions are clearly explained with just enough biochemistry to make logical sense of each process. A teacher's guide is included with a program summary and student activities. This resource is also authorized for Biology 20.

513243 $34.95

Reactivity of Elements

Science Key Concepts: Chemistry Series

Support Resource

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
✓			

This 15-minute video explores the reactivity of elements and their placement on the periodic table. The video is divided into three parts. Part 1 examines the reactivity of the alkali metals; part 2 examines the reactivity of the halogens; and part 3 explores the range of reactivity among metals. Various chemical reactions, along with their reaction equations, are shown in order to demonstrate to students the trends in reactivity. Computer animation is used to illustrate the placement of elements and reactivity trends on the periodic table. The accompanying print material includes background information, suggested discussion questions, and two possible experiments.

	LRC Order No.:	Est. Price:
• **Science.Connect 1 (Student Text and CD-ROM)** (Windows / Macintosh Version))	470972	$60.05
• **Science.Connect 1: Teacher's Resource on CD-ROM** (Site License)	470980	$490.00
• **Science.Connect 1: Teacher's Resource (Print)**	480848	$120.00

Basic / Authorized Teaching Resource
© 2002 **Author(s):** Colbourne, H. et al.

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
✓	✓	✓	✓

This custom-developed student text, with integrated multimedia CD–ROM, provides direct support for the Science 14 program. The text features many visuals, hands-on activities, and a simplified reading level. The CD–ROM contains multimedia applets linked to particular concepts in the text which may be difficult to teach.

The teacher's resource is designed to assist teachers in implementing the Science 14 program. It aligns with the Science.Connect 1 basic resource produced by this publisher. Features include planning help, background information for teachers, and blackline masters for student activities and assessment.

Separating Mixtures: Size, Crystallization, Chromatography, Gravity, Sieving, etc. — 519770 — $80.70

Support Resource
© 1995

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
✓			

This 22-minute video examines various methods for separating the components of a mixture. It explores the separation of solids, liquids, gases and vapours in a large variety of mixtures. The video's approach is to introduce the method of separation using basic laboratory apparatus and then show the application of the method in an industrial setting. The resource addresses the separation of food particles in grain, partial crystallization in sugar production, chromatography, gravity separation in mineral production, sieving and filtering, and distillation. The video also demonstrates how various methods are used in car recycling and sewage separation. A student worksheet and teacher booklet for pre- and post-viewing are included.

LRC Order No.: 521402 Est. Price: $58.40

Wild Goose Chase

Support Resource

Unit A - Investigating Properties of Matter	Unit B - Understanding Energy Transfer Technologies	Unit C - Investigating Matter and Energy in Living Systems	Unit D - Investigating Matter and Energy in the Environment
			✓

This visually appealing 49-minute video presents an in-depth study of the Canada goose and the arctic-nesting lesser snow goose, exploring the past and present dilemmas surrounding the population of these birds in Canada. At one time the species were threatened almost to the brink of extinction, but we are now presented with a population explosion. With wit and insight, *Wild Goose Chase* tackles this population issue, introduces the "goosebusters" who are trying to relocate urban geese, and shows how the geese appear to be winning the war.

© Alberta Learning, Alberta, Canada

SCIENCE 24
Units A, B, C, D

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price

Basic Learning Resources

This custom-developed student text, with integrated multimedia CD–ROM, provides direct support for the Science 24 program. The CD–ROM consists of ten interactive learning modules that complement topics addressed in the textbook.

The Teacher's Resource CD-ROM is designed to assist teachers in implementing the Science 24 program. It aligns with the Science.Connect 2 basic resource produced by this publisher. Features include planning guides, assessment rubrics, answers to questions and blackline masters. All components can be edited to provide flexibility.

	Science.Connect 2 (Student Text and CD-ROM (Windows / Macintosh Version))	2003	Basic 24A / 24B / 24C / 24D	515596	$64.30 LRC
	Science.Connect 2: Teacher's Resource CD-ROM (Windows Version) (Includes Blackline Masters, ICT Masters, and Assessment Masters)	2003	Authorized Teaching 24A / 24B / 24C / 24D		LRC
			Science.Connect 2: Teacher's Resource on CD-ROM (Site License)	515611	$490.00
			Science.Connect 2: Teacher's Resource (Print)	519811	$120.00

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SCIENCE 24

Unit A – Applications of Matter and Chemical Changes

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Support Learning Resources				
New resources for Unit A, with potential for Support status, are under review.				
Authorized Teaching Resources				
NEW Reactions: The Chemistry of Change *AIMS Interactive Science Essentials Series*	1997	Authorized Teaching 24A	Pending	LRC / Publisher / Distributor

Unit B – Understanding Common Energy Conversion Systems

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Support Learning Resources				
NEW Harness the Wind; The Solar House; Bate's Car: Sweet as a Nut; Bill Loosely's Heat Pump *A World of Energy 2 Series*	1987	Support 24B	485682	$58.40 LRC
NEW Simply Science 3: Energy Converters *Simply Science Series*	1998	Support 24B	BPN 385403	ACCESS–The Education Station
Authorized Teaching Resources				
NEW Electricity: The Invisible River of Energy (Macintosh / Windows Version 2.0) *AIMS Interactive Science Essentials Series*	1997	Authorized Teaching 24B	511081	$58.40 LRC

SCIENCE 24

Unit C – Disease Defense and Human Health

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price

Support Learning Resources

New resources for Unit C, with potential for Support status, are under review.

Authorized Teaching Resources

New resources for Unit C, with potential for Authorized Teaching status, are under review.

Unit D – Motion, Change and Transportation Safety

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price

Support Learning Resources

New resources for Unit D, with potential for Support status, are under review.

Authorized Teaching Resources

New resources for Unit D, with potential for Authorized Teaching status, are under review.

Science 24: Annotated Bibliography (alphabetical listing)

LRC Order No.: Est. Price:

Electricity: The Invisible River of Energy (Macintosh / Windows Version 2.0) (includes Teaching Module) **511081** **$58.40**

AIMS Interactive Science Essentials

Authorized Teaching Resource

© 1997

Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
	✓		

This dual platform (Macintosh and Windows) CD-ROM offers a general overview of how electricity works. The resource discusses the following topics: static electricity, current electricity, conductors, voltage, circuits (series and parallel), resistance (Ohms and amperes), switches, circuit breakers, watts, magnetic fields, light, heat, and motors. The CD is set up as a QuickTime video with demonstrations of each concept. A glossary of terms is included and directly linked to the video: when you check a term in the glossary, the QuickTime video automatically starts at the relevant point. A quiz (with immediate feedback) and a test (with feedback at end of the test) are provided. The resource is easily navigated, with a menu of options on the left hand side. Icons are large and easily understood. This resource could be used individually, or with a group using a projector.

Harness the Wind; The Solar House; Bate's Car: Sweet as a Nut; Bill Loosely's Heat Pump **485682** **$58.40**

A World of Energy 2

Support Resource

© 1987

Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
	✓		

During the first half of this 48-minute video, the alternate energy possibilities of wind energy extraction and solar home heating design are thoroughly explored through detailed animations. The third and fourth segments of the video examine the efforts of two inventors to develop and use biomass and solar heat pump technologies as small-scale alternatives to petroleum fuels for motor vehicles and home heating. Although the video was produced by the National Film Board of Canada in 1987, much of the material is still relevant within a science and technology emphasis. However, more recent information on alternative energy will need to be provided as a supplement.

LRC Order No.: Est. Price:

Pending

Reactions: The Chemistry of Change

AIMS Interactive Science Essentials

Authorized Teaching Resource

© 1997

Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
✓			

This resource helps students discover the nature of chemical change and its importance to life and everyday events around us. The program looks at common reactions, including photosynthesis and cellular respiration, to demonstrate the difference between endothermic and exothermic types and to show the common properties they share. The effects of temperature, concentration of reactants, and catalysts on rate of reaction are demonstrated. Reactions are categorized into synthesis, decomposition, and replacement reaction types. The concepts of chemical equilibrium and reversibility of reactions are also introduced, and the formation of acid deposition and other reactions in nature are explored in some detail. The resource includes a teacher's guide which provides suggested discussion and study questions, a test for vocabulary and comprehension, and an answer key.

	LRC Order No.:	Est. Price:
• **Science.Connect 2 (Student Text and CD-ROM)** (Windows / Macintosh Version))	**515596**	**$64.30**
• **Science.Connect 2: Teacher's Resource on CD-ROM** (Site License)	**515611**	**$490.00**
• **Science.Connect 2: Teacher's Resource (Print)**	**519811**	**$120.00**

Basic / Authorized Teaching Resource
© 2003 **Author(s):** Colbourne, H. et al.

Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
✓	✓	✓	✓

This custom-developed student text, with integrated multimedia CD–ROM, provides direct support for the Science 24 program. The CD–ROM contains multimedia applets linked to specific concepts in the text which may be difficult to teach.

The teacher's resource is designed to assist teachers in implementing the Science 24 program. It aligns with the Science.Connect 2 basic resource produced by this publisher. Features include planning help, background information for teachers, and blackline masters for student activities and assessment.

Simply Science 3: Energy Converters

Simply Science

Support Resource
© 1998

ACCESS–The Education Station
BPN 385403

Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
	✓		

The Simply Science series introduces the key concepts and principles of change, diversity, energy, equilibrium, matter and systems, and challenges students to identify how their place in the world is affected by the laws of nature and the technology around them. The videos incorporate vibrant images, engaging presenters, graphics, animation and experiments. In *Energy Converters*, a weight room is used to demonstrate how energy must be converted for activity and life functions to occur. Energy efficiency is examined by a sports physiologist and an athlete, and cellular respiration in hibernating animals is discussed by a hibernation expert.

Alberta Authorized Resource List and Annotated Bibliography

Science 24

Alberta
LEARNING
Learning and Teaching Resources Branch

SCIENCE 24
Units A, B, C, D

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Basic Learning Resources				
This custom-developed student text, with integrated multimedia CD–ROM, provides direct support for the Science 24 program. The CD–ROM consists of ten interactive learning modules that complement topics addressed in the textbook.				
The Teacher's Resource CD-ROM is designed to assist teachers in implementing the Science 24 program. It aligns with the Science.Connect 2 basic resource produced by this publisher. Features include planning guides, assessment rubrics, answers to questions and blackline masters. All components can be edited to provide flexibility.				
NEW Science.Connect 2 (Student Text and CD-ROM (Windows / Macintosh Version))	2003	Basic 24A / 24B / 24C / 24D	515596	$64.30 LRC
NEW Science.Connect 2: Teacher's Resource CD-ROM (Windows Version) (Includes Blackline Masters, ICT Masters, and Assessment Masters)	2003	Authorized Teaching 24A / 24B / 24C / 24D		LRC
		Science.Connect 2: Teacher's Resource on CD-ROM (Site License)	515611	$490.00
		Science.Connect 2: Teacher's Resource (Print)	519811	$120.00

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SCIENCE 24

Unit A – Applications of Matter and Chemical Changes

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Support Learning Resources				
New resources for Unit A, with potential for Support status, are under review.				
Authorized Teaching Resources				
NEW Reactions: The Chemistry of Change *AIMS Interactive Science Essentials Series*	1997	Authorized Teaching 24A	Pending	LRC / Publisher / Distributor

Unit B – Understanding Common Energy Conversion Systems

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price
Support Learning Resources				
NEW Harness the Wind; The Solar House; Bate's Car: Sweet as a Nut; Bill Loosely's Heat Pump *A World of Energy 2 Series*	1987	Support 24B	485682	$58.40 LRC
NEW Simply Science 3: Energy Converters *Simply Science Series*	1998	Support 24B	BPN 385403	ACCESS–The Education Station
Authorized Teaching Resources				
NEW Electricity: The Invisible River of Energy (Macintosh / Windows Version 2.0) *AIMS Interactive Science Essentials Series*	1997	Authorized Teaching 24B	511081	$58.40 LRC

Unit C – Disease Defense and Human Health

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price

Support Learning Resources

New resources for Unit C, with potential for Support status, are under review.

Authorized Teaching Resources

New resources for Unit C, with potential for Authorized Teaching status, are under review.

Unit D – Motion, Change and Transportation Safety

Series / Title	Copyright Date	Status / Unit(s)	LRC Order No.	Price

Support Learning Resources

New resources for Unit D, with potential for Support status, are under review.

Authorized Teaching Resources

New resources for Unit D, with potential for Authorized Teaching status, are under review.

Science 24: Annotated Bibliography (alphabetical listing)

LRC Order No.: Est. Price:

Electricity: The Invisible River of Energy (Macintosh / Windows Version 2.0) (includes Teaching Module) **511081** **$58.40**

AIMS Interactive Science Essentials

Authorized Teaching Resource

© 1997

Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
	✓		

This dual platform (Macintosh and Windows) CD-ROM offers a general overview of how electricity works. The resource discusses the following topics: static electricity, current electricity, conductors, voltage, circuits (series and parallel), resistance (Ohms and amperes), switches, circuit breakers, watts, magnetic fields, light, heat, and motors. The CD is set up as a QuickTime video with demonstrations of each concept. A glossary of terms is included and directly linked to the video: when you check a term in the glossary, the QuickTime video automatically starts at the relevant point. A quiz (with immediate feedback) and a test (with feedback at end of the test) are provided. The resource is easily navigated, with a menu of options on the left hand side. Icons are large and easily understood. This resource could be used individually, or with a group using a projector.

Harness the Wind; The Solar House; Bate's Car: Sweet as a Nut; Bill Loosely's Heat Pump **485682** **$58.40**

A World of Energy 2

Support Resource

© 1987

Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
	✓		

During the first half of this 48-minute video, the alternate energy possibilities of wind energy extraction and solar home heating design are thoroughly explored through detailed animations. The third and fourth segments of the video examine the efforts of two inventors to develop and use biomass and solar heat pump technologies as small-scale alternatives to petroleum fuels for motor vehicles and home heating. Although the video was produced by the National Film Board of Canada in 1987, much of the material is still relevant within a science and technology emphasis. However, more recent information on alternative energy will need to be provided as a supplement.

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LRC Order No.: Est. Price:

Reactions: The Chemistry of Change

Pending

AIMS Interactive Science Essentials

Authorized Teaching Resource

© 1997

Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
✓			

This resource helps students discover the nature of chemical change and its importance to life and everyday events around us. The program looks at common reactions, including photosynthesis and cellular respiration, to demonstrate the difference between endothermic and exothermic types and to show the common properties they share. The effects of temperature, concentration of reactants, and catalysts on rate of reaction are demonstrated. Reactions are categorized into synthesis, decomposition, and replacement reaction types. The concepts of chemical equilibrium and reversibility of reactions are also introduced, and the formation of acid deposition and other reactions in nature are explored in some detail. The resource includes a teacher's guide which provides suggested discussion and study questions, a test for vocabulary and comprehension, and an answer key.

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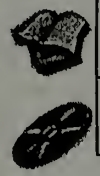
	LRC Order No.:	Est. Price:
• **Science.Connect 2 (Student Text and CD-ROM)** (Windows / Macintosh Version))	515596	$64.30
• **Science.Connect 2: Teacher's Resource on CD-ROM** (Site License)	515611	$490.00
• **Science.Connect 2: Teacher's Resource (Print)**	519811	$120.00

Basic / Authorized Teaching Resource
© 2003 **Author(s):** Colbourne, H. et al.



Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
✓	✓	✓	✓

This custom-developed student text, with integrated multimedia CD–ROM, provides direct support for the Science 24 program. The CD–ROM contains multimedia applets linked to specific concepts in the text which may be difficult to teach.

The teacher's resource is designed to assist teachers in implementing the Science 24 program. It aligns with the Science.Connect 2 basic resource produced by this publisher. Features include planning help, background information for teachers, and blackline masters for student activities and assessment.

Simply Science 3: Energy Converters

Simply Science

Support Resource
© 1998

ACCESS–The Education Station
BPN 385403

Unit A - Applications of Matter and Chemical Changes	Unit B - Understanding Common Energy Conversion Systems	Unit C - Disease Defense and Human Health	Unit D - Motion, Change and Transportation Safety
	✓		

The Simply Science series introduces the key concepts and principles of change, diversity, energy, equilibrium, matter and systems, and challenges students to identify how their place in the world is affected by the laws of nature and the technology around them. The videos incorporate vibrant images, engaging presenters, graphics, animation and experiments. In *Energy Converters*, a weight room is used to demonstrate how energy must be converted for activity and life functions to occur. Energy efficiency is examined by a sports physiologist and an athlete, and cellular respiration in hibernating animals is discussed by a hibernation expert.

Alberta Authorized Resource List and Annotated Bibliography

Vendors/Distributors

Alberta
LEARNING
Learning and Teaching Resources Branch

Vendors/Distributors

ACCESS–The Education Station
3720 – 76 Avenue
EDMONTON, AB, CANADA T6B 2N9
Telephone: 800–352–8293; 780–440–7728
Fax: 780–440–8899
Internet: http://www.accesslearning.com

Learning Resources Centre (LRC)
12360 – 142 Street
EDMONTON, AB, CANADA T5L 4X9
Telephone: 780–427–5775
Fax: 780–422–9750
Internet: http://www.lrc.learning.gov.ab.ca

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